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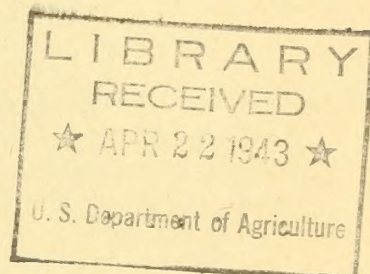
PLANT INTRODUCTIONS

THIRTY-FIRST

ANNUAL DESCRIPTIVE LIST

Season 1942-43

Containing Descriptions of the More Important
Introduced Plants Now Ready
for Listed Experimenters



DIVISION OF PLANT EXPLORATION AND INTRODUCTION
BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING
AGRICULTURAL RESEARCH ADMINISTRATION
UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY STATION
BELTSVILLE, MARYLAND

SPECIAL NOTICE

The usual introductory note is omitted from this list, and no plants are offered from the Plant Introduction Garden at Glenn Dale, Maryland, facilities of which are devoted entirely to activities directly related to the war program.

Descriptive List

Numbers preceding plant names are P. I. numbers, and in correspondence concerning any plant, both number and name always must be given.

Items marked with asterisk (*) available to nurserymen in larger quantity for propagation.

23014. ASPARAGUS SP.* (Convallariaceae.) From China. Collected at Hangchow, Chekiang, by Frank N. Meyer, Bureau of Plant Industry. A very small evergreen asparagus, attaining ordinarily a height of only 3 to 5 inches. It is used as a border along paths in small gardens and requires a shady situation. The plant endures light frosts without injury. It has proved satisfactory as a pot plant only while small, after having been grown under lath shade. New shoots that develop indoors grow tall and spindly and are unattractive. For trial in the middle and lower South and in southern California. (Savannah, Ga.)

139560. CASTANOSPERMUM AUSTRALE. (Fabaceae.) Moreton-Bay-chestnut. From Florida Presented by David K. Stabler, Mountain Lake Park, Lake Wales, through J. B. Berry, Waverly, Fla. A large and beautiful leguminous tree, native to Queensland and New South Wales, with large evergreen pinnate leaves having 11 to 15 broad entire leaflets, and racemes of yellowish-green flowers which later become yellow to deep orange. The thick short subcylindric pods are 6 to 8 inches long by about 2 inches in diameter and contain 3 to 5 large seeds, resembling chestnuts, that are poisonous. For trial in southern and central Florida and southern California. (Savannah, Ga.)

140276. CUPRESSUS SP.* (Pinaceae.) Cypress. From Afghanistan. Collected in a garden at Nimla, by Wilbur Harlan. A tree that in the young stage is vigorous and has reddish-brown branches with attractive blue-green foliage. For trial in the Southern States and on the Pacific Coast. (Chico, Calif.)

142487. EHRETIA DICKSONI.* (Boraginaceae.) From California. Presented by Dr. I. J. Condit, Citrus Experiment Station, Riverside, California, who obtained it from the Bard Estate, Oxnard, Calif. A deciduous tree 25 or rarely 50 feet high, with broadly elliptic acute leaves, rhomboid or rounded at the base, serrate, rough above and pubescent beneath. Native to southwestern China and northern India. The flowers, variable in size and somewhat fragrant, are in a terminal bristly compound panicle; the fruits are yellowish drupes about 1/2 inch in diameter, which keep dropping as they mature. The light but tough and strong wood is used in China for carrying-poles. For trial in southern California and in the warmer parts of the Gulf region. (Chico, Calif.)

106274. ELEOCHARIS DULCIS (E. tuberosa).^{*} (Cyperaceae.) Matai (pronounced mah tie). From China. Presented by Lingnan University, Canton. A Chinese sedge long cultivated as an irrigated food crop in eastern and southeastern China. The small brown-skinned corms, or "tubers," up to 1 3/4 inches in diameter, suggest chestnuts in appearance, hence the name "water-chestnut" by which they have commonly been known in English-speaking countries. The use of this name, however, has caused the plant to be confused with Trapa natans, a serious pest in streams and much longer known as water-chestnut. The name "water-nut" has also been used recently in an endeavor to avoid this difficulty but appears not to differ sufficiently from the former to make it entirely suitable. The Chinese name matai is therefore recommended. Matai has a crisp white flesh, which is both starchy and sweet, and in food value resembles the potato except that it contains less starch and much more sugar. Successful storage is very difficult. The corms must either be coated with mud (which is allowed to dry) to retard drying and decay, as the Chinese do, or be kept moist and cold in an outdoor pit or in a refrigerator at 50°-55° F. Matai is used in the Chinese-American dish chop suey and in various Chinese dishes and is well adapted for use widely in American cookery. The present plant is a variety known near Canton as Hon matai. It differs from the ordinary cultivated form of the plant in that irrigation is discontinued before harvest, whereas the common variety is harvested in mud and water. Details of culture have not been fully worked out and, especially with reference to time of planting and of harvesting, will vary with latitude; but continuous irrigation in the field, from early summer until shortly before frost in fall, is essential everywhere. At Savannah, from the standpoint of yield, the best time for planting appears to be the middle of May or earlier. It is important, however, that the planting be done before excessive sprouting or other deterioration due to warm weather takes place. In much more northern localities it probably will be advisable to start the plants indoors. The corms must be kept moist and cold until planted. They are planted 4 inches deep in moist soil and kept well watered. When the leaves are 10-12 inches high, transplant at the same depth to soil that can immediately be submerged with 5 inches of water, the plants being spaced about 2 1/2 feet in staggered rows 3 feet apart. The new corms do not begin to develop until early autumn, usually after flowering of the plants. Water is withdrawn from the crop at least 2 or 3 weeks before it is to be harvested or immediately after the first killing frost. At Savannah part of the crop has been left in the ground without injury until the end of March. Experimenters who may desire to undertake a test of some size with matai and who have the requisite facilities may write of their plans, in order to obtain more detailed suggestions. For trial under irrigation especially in the coastal regions from Long Island southward and in central and southern California. (Savannah, Ga.)

143765. *EUCALYPTUS CAMALDULENSIS*.* (Myrtaceae.) From Australia. Presented by the Department of Agriculture, Brisbane. A tall Australian tree up to 200 feet high, with smooth dark-gray bark, narrowly lanceolate leaves 6 inches or more long, stalked umbels of small flowers attractive to bees, and globular fruits with conical tops. The heavy red wood is durable both above and below ground and is used for railroad ties, piles, and fence posts. At Chico, California, trees of this species 22 to 28 feet high, suffered only slight injury in a minimum temperature of 12° F. For trial in the Gulf States and California. (Chico, Calif.)

143766. *EUCALYPTUS CITRIODORA*.* From Australia. Presented by the Department of Agriculture, Brisbane. A handsome fast-growing Australian tree which, in favorable situations, becomes 60 to 100 feet high. The long narrow leaves, equally shiny on both sides, possess a pleasant odor closely resembling that of the lemon. The wood is of a grayish, brownish, or yellowish tint and is valued for its strength, elasticity, and beauty. This eucalypt thrives in California in the nearly frostless coast regions but is not suited to the dry interior valleys. It may also be tried in the warmest localities in southern Florida. (Chico, Calif.)

143768. *EUCALYPTUS GUMMIFERA*. From Australia. Bloodwood. Presented by the Department of Agriculture, Brisbane. A handsome medium-sized evergreen tree, native to Australia, with rough persistent bark, alternate, narrow to broad-lanceolate, mature leaves 2 to 6 inches long by 1 to 2 inches wide; and large corymbs of yellowish white fragrant flowers. The tree occurs in the coastal region from sea level to 3,000 feet altitude; it yields a deep-red timber resistant to termites and durable underground. (Chico, Calif.)

143769. *EUCALYPTUS MACULATA*.* From Australia. Presented by the Department of Agriculture, Brisbane. A tall tree with smooth light-colored bark, deciduous in large patches, narrow to broad-lanceolate, alternate, mature leaves 4 to 12 inches long, equally green on both surfaces, and terminal inflorescences. The fruit is 1/2 to 3/4 inch long, and nearly as broad. The timber is useful for tool handles, building, and as a general hardwood. The species is adapted to the coast ranges in Australia and occurs in sandy clay and deep loamy soils. For trial on the California coast and in southern Florida. (Chico, Calif.)

143770. *EUCALYPTUS MICROCORYS*.* From Australia. Presented by the Department of Agriculture, Brisbane. A tall tree with persistent furrowed fibrous bark and usually ovate-lanceolate acuminate leaves 3 to 4 inches long. The fruits are obovoid-oblong and scarcely one-sixth inch in diameter. The young trees are rapid growers but they do not thrive under dry conditions. At Chico, California, trees of this species 12 feet high were killed in a minimum temperature of 12° F. For trial in the moister localities of southern California and in southern Florida. (Chico, Calif.)

143771. *EUCALYPTUS PANICULATA*. * From Australia. Presented by the Department of Agriculture, Brisbane. A tall or medium-sized Australian tree with deeply furrowed gray-brown bark. The lanceolate-acuminate leaves are 3 to 5 inches long, and the flowers are borne in panicles or in axillary clusters. The wood is pale, very hard and is said to cut almost like horn; it is available for ties, fencing, and building purposes. The tree does not endure great heat and drought. For trial in the mild coastal regions of California and in southern Florida. (Chico, Calif.)

141848. *EUCALYPTUS PAUCIFLORA*. From Brazil. Presented by Dr. Edmundo Navarro de Andrade, Rio Clara, Sao Paulo. A high-mountain Australian tree, up to 100 feet high, with spreading branches, slender, somewhat pendulous twigs, and thick ovate-lanceolate or lanceolate leaves, 4 to 8 inches long. The outer bark is deciduous and the inner bark smooth and pale gray. The species has withstood a minimum temperature of 19° F. in southern California and may endure much lower. It is said to grow well in swampy lowlands. For trial in southern California and the warmer parts of the Gulf region. (Chico, Calif.)

143772. *EUCALYPTUS PILULARIS*. * Blackbutt. From Australia. Presented by the Department of Agriculture, Brisbane. A slender tree reported to average 100 to 150 feet high, with a diameter of 3 to 5 feet, rarely much larger. The bark of the lower part of the trunk is dark gray, rough, and partially persistent, but higher up it flakes off in patches; that of the branches is smooth and light colored. The leaves are scattered, nearly lance-shaped, and about the same color on each side, and the flowers are of medium size. The seed cases are nearly spherical, or the shape of the broad part of an egg. It is considered one of the best all-around timbers and is reported to be especially valuable for fence posts and telegraph poles. The honey from the flowers is reported to be of especially good quality. In California the tree grows well near the coast but does not thrive in the dry hot interior valleys; it endures neither very high nor very low temperatures. For trial on the southern California coast and in southern Florida. (Chico, Calif.)

143774. *EUCALYPTUS RESINIFERA*. From Australia. Presented by the Department of Agriculture, Brisbane. A large tree with rough, reddish, fibrous bark persistent to the small branches, and alternate lanceolate mature leaves dark green above and paler beneath; the juvenile leaves are opposite for 3 or 4 pairs, and narrow lanceolate. The flowers are 5 to 10 in axillary umbels, the buds conical and the fruits 1/3 inch wide. The heavy timber is a rich red and is said to be strong and durable; because of the color the tree is also called "red mahogany." Its lasting qualities under ground have been questioned. For trial in the warmer coastal sections of California and in southern Florida. (Chico, Calif.)

143775. *EUCALYPTUS SALIGNA*. From Australia. Presented by the Department of Agriculture, Brisbane. A beautiful straight tree 100 feet or more high, with smooth silvery bark, native to New South Wales. The narrowly lanceolate mature leaves are 4 to 6 inches long, and the clusters of four to eight flowers are on short peduncles. The wood is pale red, hard, and durable and is easily worked. The tree prefers heavy but well-drained soils. For trial in mild situations on the California coast and in southern Florida. (Chico, Calif.)

143776. *EUCALYPTUS STAIGERIANA*. * Lemon-scented ironbark. From Australia. Presented by the Department of Agriculture, Brisbane. A medium-sized ornamental tree with hard, rugged-fibrous, persistent bark and yielding a red timber of good quality. The juvenile leaves are opposite for 3-5 pairs or more, oblong to lanceolate, lemon-scented, $1\frac{1}{2}$ - $2\frac{1}{2}$ inches long by $\frac{5}{8}$ to 1 inch wide, while the mature leaves are alternate and longer and narrower. They yield 2.48 per cent of oil. The inflorescences are axillary umbels or terminal panicles and are 3-6 flowered. The fruits are up to $2\frac{1}{2}$ x 2 inches. For trial in the milder parts of California, the Southwest, and the Gulf region. (Chico, Calif.)

143778. *EUCALYPTUS TRIANTHA* (*E. acmenioides*). White mahogany gum. From Australia. Presented by the Department of Agriculture, Brisbane. A tall Australian tree with fibrous bark, persistent on trunk and branches, and lanceolate sinuate leaves pale beneath; the fruits are not over $\frac{1}{3}$ inch across. The tree grows in poor, well-drained soil in Australia, and the wood is strong and durable. For trial in the milder parts of California and the Gulf region. (Chico, Calif.)

113766. *GEIJERA PARVIFLORA*. (Rutaceae.) Wilga. From Australia. Presented by F. J. Rae, Director, Melbourne Botanic Gardens and National Herbarium, South Yarra, Victoria. The wilga is a tall evergreen shrub or small tree native to the interior of New South Wales, where it reaches a height of about 30 feet. It has slender pendulous branches, narrow leaves 3 to 5 inches long and when well developed has a highly ornamental appearance with something of the aspect of a weeping willow. It has remarkable drought-resistant qualities and in times of drought the foliage serves as forage, which is much relished by sheep and cattle. (Supply very limited.) For trial in the warmest parts of California and the Gulf region. (Chico, Calif.)

129785. *HEBE TRAVERSII*. (Scrophulariaceae.) From New Zealand. Presented by the Botanic Garden, Christchurch. A small compact shrub 2 to 5 feet in diameter, with spreading leathery leaves an inch long, and racemes of small white flowers at the tips of the branches. For trial in California and the Gulf region. (Chico, Calif.)

111054. *HYPERICUM HOOKERIANUM*. (Hypericaceae.) St. Johnswort. From India. Presented by the Lloyd Botanic Garden, Darjeeling, at the request of the Director of the Botanical Survey of India, Calcutta. A compact shrub up to 6 feet high, with bright red-brown branches, evergreen leaves 1 to 4 inches long, and many-flowered corymbs of large golden-yellow flowers, each about 2 inches across. Native to the Himalayas. For trial in the milder parts of California and the Gulf region. (Chico, Calif.)

66028. *ILEX PURPUREA OLDHAMII*. (Aquifoliaceae.) From Nanking, China. Presented by M. L. Hancock, University of Nanking. A small much-branched tree with an abundance of glossy spineless evergreen leaves 3 to 4 inches long. The small purple flowers appear in May and are followed by large clusters of oval berries, one-quarter inch long, which become brilliant red in autumn and, as they extend beyond the foliage, give more color than those of most species. A 9-year-old tree at Chico, California, is 16 feet high, with equal spread. It has withstood a maximum temperature of 113° F., in full sun, and a minimum of 12° F., with no injury. Propagation is by stratified seed or by cuttings with the use of growth hormones. For trial on the Pacific coast and in the Southern States. (Chico, Calif.)

94779. *MIMOSA SPEGAZZINII*. (Mimosaceae.) From Argentina. Presented by the Director, Jardin Botanico, Buenos Aires. A much-branched tender climbing shrub with recurved spines, sensitive bipinnate leaves 2 to 3 inches long, and globular heads, about 1 inch in diameter, of rose-purple flowers. It is a native of Argentina. At some points in central Florida this shrub has been reported to grow well and to be a very satisfactory flowering ornamental but in other places it has been straggly in habit. It seeds freely but is killed back at a temperature of about 30° F. (Supply very limited.) For trial only in nearly frostless localities. (Chico, Calif.)

129793. *OLEARIA ODORATA*. (Asteraceae.) From New Zealand. Presented by the Curator, Botanic Gardens, Christchurch. An erect, sweet-scented, much-branched shrub 6 to 12 feet high, with leathery, linear-spathulate or linear-obovate leaves 1/3 to 1 inch long, and small purplish flower heads in fascicles of 2 to 5. Native to New Zealand between 1,000 and 3,000 feet altitude. For trial in the milder parts of the Pacific coast and the Gulf region. (Chico, Calif.)

72814. *PYRACANTHA CRENATO-SERRATA*. Firethorn. (Malaceae.) From England. Presented by Sir Arthur W. Hill, Director, Royal Botanic Gardens, Kew. A spiny evergreen shrub up to 9 feet high, with young branchlets rusty-pubescent, and elliptic to obovate-oblong leaves 1 to 2 inches long, lustrous dark green above and lighter beneath. The coral-red fruits, a quarter of an inch across, are in dense corymbs. For trial in the southern half of the United States. (Savannah, Ga.)

40736. *PYRACANTHA CRENULATA KANSUENSIS*.* Kansu firethorn. From China. Collected in Kansu Province by Frank N. Meyer, Bureau of Plant Industry. A shrub, up to about 8 feet high, with attractive small oblong leaves and numerous small orange-colored berries of striking appearance. It grows on stony mountainsides in China. For trial in all but the warmest parts of the South. (Savannah, Ga.)

74222. *QUERCUS MYRSINAEFOLIA*.* (Fagaceae.) Oak. From China. Presented by Prof. Jos. Bailie, University of Nanking. A handsome evergreen Japanese oak up to 40 feet high with ovate dentate leaves 3 to 5 inches long, cuneate at the base, lustrous above and dull light green beneath. The ellipsoid acorns, nearly an inch long with cups saucer-shaped or deeper, have several silky concentric rings. The tree is one of the hardiest evergreen oaks. It is closely related to *Quercus glauca* and is clearly distinguished from the latter only by the light green under surface of the leaves and the cuneate instead of rounded leaf bases. For trial from Philadelphia and the Ohio River southward and on the Pacific coast. (Savannah, Ga.)

126978. RHAPIDOPHYLLUM HYSTRIX.* (Phoenicaceae.) Needle palm. From Savannah, Georgia. Obtained by D. A. Bisset and other members of the Plant Introduction Garden at Savannah. An attractive hardy dwarf fan palm, native to the lowlands of South Carolina, Georgia, and Florida, but very local in its distribution. It is now quite rare, and appears to be approaching extinction as a wild plant. The 2- to 3-foot stems are erect or creeping with leaves dark shiny green above and silvery gray beneath. Slender, sharp, black spines up to a foot long, project from the trunk in every direction and also surround and protect the inflorescence. The staminate and pistillate flowers are borne on separate plants. At Glenn Dale, plants survived the severe winter of 1939-40 with the protection of leaf litter. For trial on the Pacific coast and in the Middle and South Atlantic and northern Gulf regions. (Savannah, Ga.)

44401. RUBUS IRENAEUS. Presented by Aldenham House Gardens, Elstree, Herts, England. A prostrate, prickly, evergreen shrub, native to central and western China, with white flowers, large red or yellow inedible fruits, and simple leaves suggesting those of coltsfoot. It is not known to have fruited as yet in this country. For trial in the southern half of the United States. (Savannah, Ga.)

27667. TILIA DASYSTYLA (*T. rubra caucasica*). (Tiliaceae.) From USSR (Russia). Collected at Tiflis, Caucasus, by Frank N. Meyer, Bureau of Plant Industry. A beautiful native Caucasian shade tree, growing to large size and often to great age. It should be of value as a park and avenue tree in the mild-wintered sections of the United States and is recommended for trial in the warmer parts of California, the Southwest, and the Gulf region. (Chico, Calif.)

B A M B O O S.

For the convenience of experimenters, the bamboos of which plants are available are listed all together here. The shipping weight ranges usually from 1 to 2 pounds per plant. Bamboos in general require a moderately moist well-drained soil, of good fertility. Attention of experimenters is directed to the fact that small bamboo plants, even more than most other plants, require frequent watering until well established; this means for at least 2 or 3 months after planting.

66781. ARUNDINARIA LONGIAURITA. (Poaceae.) Bamboo. From China. Collected near Tsehaang, Lungtau Mountains, by F. A. McClure, Bureau of Plant Industry. Chinese name Tip mo chuk. A wild bamboo 3 to 12 feet high found growing in a dense brake on the sandy flood plain of a little stream. The rough slender culms, 1/4 to 5/8 inch in diameter, are tough and have very long internodes with very small cavities. The taller culms usually bear branches only on the upper part and should be especially useful for small plant stakes; the branches are tufted, very upright, and stiff; leaves broadly lanceolate, 5 to 10 inches long and 7/8 to 1 7/8 inches wide. (Savannah, Ga.)

75149. ARUNDINARIA NAGASHIMA. Bamboo. Presented by the Director, Royal Botanic Gardens, Kew, England. A small hardy running bamboo, ultimately producing culms about 2 1/2 feet high, often with branches from the upper nodes and with lanceolate to oblong-lanceolate leaves 2 to 6 inches long. It is native to Japan. The plant is evergreen at temperatures down to about 50° F. and is attractive for mass planting as a ground cover, either in full sun or partial shade. On account of the hardiness and vigor of the underground parts of the plant, it may become weedy if the rhizomes are not prevented from spreading beyond the desired limit by a deep barrier of some sort. The small plants as received should be grown the first year in a nursery row and be freely watered, especially during the first two months. Early the next spring they may be transplanted, with a ball of earth, to the permanent situation, in good well-drained land; well-rotted manure or a good commercial fertilizer should be placed in the hole. Plants furnished in lots of 3 to 10. For trial in the middle and upper South and the mildest parts of the Northern States. (Savannah, Ga.)

76648. ARUNDINARIA SP. Bamboo. From China. Collected about 3 miles southwest of Yunghui, Kwengsai, by F. A. McClure, Bureau of Plant Industry. Chinese name Man lei chuk. A very straight, rather smooth-jointed bamboo with stiff upright branches in fascicles at the nodes and thick leaves 5 to 10 inches long and 1/2 to 1 1/2 inches wide. In good soil the culms grow 16 to 20 feet high and 5/8 to 1 inch in diameter; the walls are of medium thickness. The smallest culms, 6 to 10 feet long, are used to make Chinese pens, and the larger ones for clothes-drying and mosquito-net poles. The young shoots are edible. Unlike most bamboos of the running type, the rhizomes of this one seem not to have a bud at every node, but only at infrequent intervals. Also there is a tendency of the culms to send up other culms from the base, after the fashion of bamboo of the clump type. For trial throughout the South and on the Pacific coast. (Savannah, Ga.)

77010. *ARUNDINARIA* SP.* Bamboo. From China. Collected at Taaihohhan, Anhwei Province, by F. A. McClure, Bureau of Plant Industry. Chinese name Liu chuk. A running bamboo with cylindrical solid or nearly solid culms up to 7 feet high, numerous small acutely ascending branches, and dark-green rather large drooping leaves, 3 1/2 to 7 inches long by 3/4 to 1 1/4 inches wide. At Savannah this species spreads slowly, forming an unusually dense growth of attractive appearance. It is closely allied to *Arundinaria longiaurita*. For trial from Philadelphia and the Ohio River southward to the Gulf and on the Pacific coast. (Savannah, Ga.)

93573. *BAMBUSA LONGISPICULATA*. (Poaceae.) From India. Presented by R. N. Parker, Forest Botanist, Forest Research Institute and College, Dehra Dun, United Provinces. A tropical clump bamboo growing to 50 feet high, with 10 to 12 leaves up to 9 inches long on a branchlet. For trial in the warmer parts of southern Florida and southern California. (Savannah, Ga.)

99289. *BAMBUSA MULTIPLEX*. Hedge bamboo. From Florida. Presented by Jas. H. Wells, formerly of Baldwin, Florida, who obtained it from C. E. Pleas, Chipley, Fla. Variety Stripestem Fernleaf (also known as Variety Disticha Striata). An oriental fern-leaved dwarf variety of the hedge bamboo, differing from the ordinary Variety Fernleaf in being of much smaller size and in having pinkish culms with slender green stripes; the plant is very erect in habit. The varietal characters are somewhat unstable, however, and if small plants are grown in rich soil in the open there is a tendency to revert to the larger parent form; the striping of the culm then disappears and the foliage changes from the fern-leaf type. In its dwarf phase the plant grows about 6 feet high but in the reverted form it attains 15 feet or more. Like other clump bamboos, this variety is easily propagated by division of the clump into 1- or 2-stemmed units in the spring. (Savannah, Ga.)

80872. *BAMBUSA TEXTILIS*. From China. Presented by the Lingnan University, Canton. Chinese name Fan taan chuk. A bamboo from the northern and western parts of Kwangtung Province. It is a medium large, thin-walled, semihardy, clump bamboo, used chiefly by the Chinese for making steam-trays for restaurants. It is said to be too brittle for most weaving purposes or for making rope but it is extremely ornamental on account of the compact clump habit and the tall straight culms, which are gray with siliceous powder. The culms are naked of branches to a height of 12 to 15 feet in mature plantings. This bamboo has withstood a minimum temperature of about 17° F. with little injury to the foliage. For trial in the Gulf region and in the warmer parts of California. (Savannah, Ga.)

110510. *BAMBUSA TULDOIDES*. Puntingpole bamboo. From China. Presented by Lingnan University, Canton. A handsome thick-walled bamboo probably up to 50 feet high, used in China for a variety of industrial purposes and especially for punting poles. (A form of this species which has long been known in Florida, under the horticultural name *Bambusa thouarsii*, is hardy down to 20° F.) Plants furnished in lots of 1 to 3. For trial in the southern parts of Florida and California and on the Texas coast. (Savannah, Ga.)

77013. *BAMBUSA VENTRICOSA* * Buddha bamboo. From China. Presented by Lingnan University, Canton. A clump-forming bamboo growing to about 25 feet high in the open but commonly grown by the Chinese as a pot or tub plant. Under this culture it is dwarfed to about 3 feet and the internodes of the culms and branches become swollen in a characteristic manner, to which fact is due the Chinese name Fut t'o chuk (Buddha's belly bamboo). The plant quickly loses its foliage in the dry atmosphere and deficient light of ordinary living rooms. The lanceolate leaves of the dwarfed plants are 1 to 4 inches long but on larger plants in the open the leaves are nearly twice as long. As grown in the open this bamboo is reported to have withstood temperatures down to about 20° F. with little or no injury. For trial outside in the milder parts of California and the Gulf region and elsewhere under glass. (Savannah, Ga.)

77014. *BAMBUSA* SP. Chinese goddess bamboo. From China. Presented by Lingnan University, Canton. A small, graceful, fern-leaved bamboo 5 to 10 feet high. It resembles the Stripstem Fernleaf variety of *Bambusa multiplex* (P.I. No. 99289) in foliage characters but differs in being less stiffly erect, having green culms, and being perhaps slightly more cold resistant. The leaves are extremely small and closely 2-ranked on slender branchlets or twigs which curl downward toward the tips in a characteristic manner. The entire plant is plain green. It is unique among bamboos of its class in that the culms are always solid. This handsome little bamboo is one of the hardiest of the clump type and at Savannah, Ga., has withstood temperatures as low as 15° F., practically uninjured. It is commonly grown as a hedge in southern China and is said to respond admirably to pruning. It is also well suited for growing in individual clumps in the open or for pot culture as a dwarf plant in the moist atmosphere of a well-lighted greenhouse. In the dry air and subdued light of living rooms, however, the foliage quickly turns yellow and falls. Propagation is by division of the clumps into units with one or more stems. For trial outside in the South Atlantic and Gulf regions and in the milder parts of the Pacific Coast, and under glass elsewhere. (Savannah, Ga.)

112744. *CHIMONOBAMBUSA QUADRANGULARIS*. (Poaceae.) Square bamboo. From Japan. Presented by Miss Genevieve Wimsatt, Washington, D. C. A shade-loving bamboo, reported to grow to about 25 feet high, that produces angular culms squarish in cross section. This character is not prominent, however, in culms of very small diameter. The culms are encircled at the nodes by characteristic small projections. The lower sections of larger culms, with the rooty bases, are used for making fancy canes. The thin, lanceolate, acuminate leaves, tapering or slightly rounded at the base, are up to 11 inches long and 1 inch wide. This bamboo is said to be grown only in shaded or semishaded situations in the Orient. It is rather easily propagated from 15- to 18- inch cuttings of vigorous young rhizomes in the spring. It has endured a minimum temperature of 14° F., with killing of the youngest leaves only, when protected from direct sunlight. Young plants should be protected from extreme cold and be given other special care. (Savannah, Ga.)

42659. *PHYLLOSTACHYS BAMBUSOIDES CASTILLONI*.* (Poaceae.) Castillo bamboo. From Japan. Obtained from the Yokohama Nursery Co. A medium-sized ornamental variety of the giant timber bamboo, growing to about 30 feet high with golden-yellow culms and branches with a conspicuous green stripe on the flattened side of each internode. The leaves occasionally bear narrow creamy-white stripes. The foliage is evergreen at temperatures down to about 5° F., but at a few degrees lower the plants are killed to the ground or severely injured. The plant spreads by vigorous underground rhizomes from which the new culms arise. It grows to full size only in grove form, in an area at least 30 feet across, and after 10 or more years. Artificial means are required to keep the grove within bounds. Culms 3 years old are useful for fishing poles, plant stakes, etc. The edible young shoots, with characteristic smooth spotted and blotched sheaths, appear in spring. Plants supplied in lots of 5 or more. The first season the plants should be grown 1 1/2 to 2 feet apart in nursery row, in well-fertilized soil, and be freely watered in dry weather. In the late winter or early spring following, transplant with ball of earth to permanent situation, on good well-drained soil, spaced 8 to 10 feet apart each way. Well-rotted manure or a good commercial fertilizer should be placed in the hole. New plants from rhizomes left in digging should appear in the nursery in spring and can be transplanted later. For trial from North Carolina to the northern Gulf region and on the Pacific coast. (Savannah, Ga.)

116965. *PHYLLOSTACHYS FLEXUOSA*. Bamboo. From England. Presented by the Director, Royal Botanic Gardens, Kew. A rather small, hardy bamboo of the running type, native to China, which grows to a height of 16 feet or more. The linear-lanceolate leaves, usually 2 or 3 on a branchlet, are 2 to 4 inches long. The culms, when 3 years old, are useful for plant stakes, small fishing poles, etc. The cold resistance and cultural treatment required are the same as for *Phyllostachys bambusoides castilloni* (P. I. No. 42659) but the spacing of the plants in the permanent planting should be 6 to 8 feet. Plants will be furnished in lots of 5 or more. For trial on the Pacific coast and in the milder parts of the South. (Savannah, Ga.)

73452. *PHYLLOSTACHYS HENRYI*. Henry bamboo. Originally collected in China by F. N. Meyer, Bureau of Plant Industry. The present plants are grown from material received from E. A. McIlhenny, Avery Island, La. This is a running bamboo of medium size, growing only to about 26 feet high but with diameters up to 2 1/2 inches. It is said to be one of the most highly esteemed edible bamboos of China, the fresh shoots being entirely free from bitterness. The plants develop rapidly under favorable conditions and sometimes produce culms of maximum size within four years from planting. Culture same as for the preceding. Not less than 10 plants (shipping wt. 12 - 15 lbs.) sent to an experimenter. For trial, in grove form only, in all but the warmest parts of the South Atlantic and Gulf regions and on the Pacific coast. (Savannah, Ga.)

49505.* *PHYLLOSTACHYS NIGRA*. Black bamboo. From California. Presented by the California Nursery Co., Niles. Blackspot. A bamboo from Japan, of rather slow-spreading habit, growing to about 25 feet high. The culms are at first green but later become increasingly spotted or blotched with black until nearly, but not quite, solid black. The leaves endure temperatures down nearly to 0°F. without serious injury. The habits of growth and the methods of culture and control are the same in general as for *Phyllostachys bambusoides castilloni* but

the spacing in setting plants permanently should be 6 to 8 feet apart. This variety can be grown to full size in an area 20 to 25 feet across. The culms are useful for fishing poles, canes, plant stakes, etc. Plants will be sent in lots of 5 or more. For trial in the Pacific coast region and in all except the warmest parts of the Southern States. (Savannah, Ga.)

66784. *PHYLLOSTACHYS NIGRA*. Black bamboo. From China. Collected in a ravine on Peng Mountain, Lungtau Mts., in Kwangtung Province, and presented by Lingnan University, Canton. Willowy black. A handsome variety differing from the preceding (P. I. No. 49505) in being more rapid spreading and in that the culms are not quite so tall, that they become solid purplish black in the second year, and in having somewhat drooping foliage. In China no special use is made of the culms but they can be used for purposes for which much strength is not required. Culture is the same as for the preceding. Plants will be furnished in lots of 5 or more. For trial in all but the warmest parts of the Southern States, and on the Pacific coast. (Savannah, Ga.)

24761. *PHYLLOSTACHYS NIGRA HENONIS*.* Henon bamboo. From Japan. Originally obtained by Wm. D. Hills, Bureau of Plant Industry. The present plants are grown from material received from E. A. McIlhenny, Avery Island, La. Japanese name Hachiku. A hardy giant bamboo of running habit, ultimately producing culms 50 feet high and 3 1/2 inches in diameter. The edible new shoots appear during April and May. The shoots are easily distinguished from those of other giant bamboos in that the sheaths which at first enfold them are unspotted mauve, with a small crinkly green reduced blade at the apex of each sheath. This is considered the hardiest of the giant bamboos but it is more or less injured at temperatures lower than 0° F. Culture same as for *Phyllostachys bambusoides castilloni*, but in permanent planting the original spacing should be not less than 10 feet. Plants furnished in lots of 15 or more, for growing in grove form only. For trial in the milder parts of the Southern States, except southern Florida, and on the Pacific coast. (Savannah, Ga.)

89718. *PHYLLOSTACHYS SULPHUREA*. Sulfur bamboo. From England. Obtained from V. N. Gauntlett & Co., Ltd., Chiddingfold, Surrey. A hardy running bamboo of striking appearance, 25 to 30 feet high, with the internodes of culms and branches a clear sulfur yellow except for 1 or 2 narrow green stripes on the rounded part and an irregular green ring just below the node. It is native to China. The culms are slightly larger near the base for their height than those of most related bamboos. They are useful for any of the purposes for which culms of others are suited. The plant probably will withstand a minimum temperature of 5° F. Culture is the same as described for *P. bambusoides castilloni*. Plants furnished in lots of 5. For trial in the South, except southern Florida, and on the Pacific coast. (Savannah, Ga.)

77257. *PHYLLOSTACHYS SULPHUREA VIRIDIS*. Green sulfur bamboo. From France. Obtained from Gaston Negre, Generargues. A Chinese bamboo of running habit, up to 45 feet high, with 2 to 3 leaves up to 5 inches long at the tips of the twigs, or branchlets. The culm sheaths are glabrous, smooth on the margins, the lowest ones, when fresh, brownish yellow and those higher on the culm gradually becoming yellowish green, all more or less blotched, spotted, or speckled with dark to light brown. As indicated by the name, this is a green-stemmed variety of the sulfur bamboo, *Phyllostachys sulphurea*. It grows considerably taller than the species and is believed to withstand somewhat lower temperatures—down nearly to 0° F. Culture the same as for *P. bambusoides castilloni*. For trial from southern Virginia to the northern Gulf region and on the Pacific coast. (Savannah, Ga.)

55713. *PHYLLOSTACHYS* SP. Bamboo. From China. Collected by F. N. Meyer, Bureau of Plant Industry. A hardy bamboo of running type, to 25 feet high. This species is easily distinguished from others of similar appearance by the yellowish color of the flattened sides of the internodes of culms and branches during the first year or two, while the rounded parts are green. Grows to full size only in grove form, in an area at least 25 feet across, and after several years. Culms useful for plant stakes, fishing poles, etc. This bamboo was for a time sent out under the name *Phyllostachys nevinii* but is now considered to be of another, apparently undescribed, species. Its climatic and cultural requirements are the same as for *P. bambusoides castilloni*. Plants furnished in lots of 10 or more. For trial in the milder parts of the South, except southern Florida, and on the Pacific coast. (Savannah, Ga.)

82047. *PHYLLOSTACHYS* SP. Bamboo. From China. Originally collected by F. N. Meyer, Bureau of Plant Industry. The present plants are grown from material received from E. A. McIlhenny, Avery Island, La. A hardy giant bamboo of running habit, with dense handsome foliage, ultimately producing culms 40 or more feet high. The plant bears certain resemblances to *Phyllostachys bambusoides*, the giant timber bamboo, but differs in being of more rapid growth, having thinner-walled culms, and in several minor respects. Culture the same as for *P. bambusoides castilloni*. For trial in localities in which sub-zero temperatures are not often experienced and soil moisture is adequate. Plants furnished in lots of 15 or more. (Savannah, Ga.)

110511. *PHYLLOSTACHYS* SP. From China. Presented by Lingnan University, Canton. Chinese name Man sun. A hardy bamboo up to 12 feet high grown especially for its edible young shoots, which are of high quality though never over an inch in diameter. The culms are rather thin walled, with finely ribbed internodes, distinctly glaucous when young, and the lower nodes are noticeably purplish in the young stage. For trial especially on the coastal plain from North Carolina to the northern Gulf region and on the Pacific coast. (Savannah, Ga.)

116768. *PHYLLOSTACHYS* SP. Bamboo. From China. Collected by F. N. Meyer, Bureau of Plant Industry. A hardy running bamboo, up to 25 feet high, with dense foliage. The leaves are somewhat narrowly lanceolate, 2 to 5 inches long and $\frac{5}{16}$ to $\frac{1}{8}$ inch wide, usually 2 to 5 on a twig on new culms and reduced to 2 or 3 on twigs of older culms, but the twigs are numerous. The plant much resembles *P. aurea* but there is never any of the irregular crowding of the lower nodes of the culm as in that species, and the ligules of the culm sheaths are brownish, truncate, laciniate, and more prominent than in *P. aurea*; the ligules of the leaf sheaths are also higher than in the latter species. The conditions under which plants will be furnished to experimenters and the cultural requirements and uses of culms are the same as for *P. bambusoides castilloni*. (Savannah, Ga.)

101174. *PSEUDOSASA DISTICHA*.* (Poaceae.) Fern bamboo. From France. Obtained from V. Lemoine & Sons, Nancy. A dwarf bamboo of running habit, growing sometimes 3 to 5 feet high, with rather narrow leaves 2 to 4 inches long. The conspicuously 2-ranked leaf arrangement suggests the name fern bamboo. This attractive little species is a somewhat less rampant spreader than *Pleiblastus pumilus*. For trial in the upper South and the mildest parts of the northern states. (Savannah, Ga.)

110338. *PSEUDOSASA DISTICHA*.* Fern bamboo. From England. Presented by the Director, Royal Botanic Gardens, Kew. Same description as for the preceding, P. I. No. 101174. (Savannah, Ga.)

73962. *SASA AUREO-STRATA*. (Poaceae.) From Japan. Obtained from the Yokohama Nursery Company, Yokohama. A dwarf hardy running bamboo, 1 to 2 feet high, native to Japan. The lanceolate or narrow-lanceolate leaves, $1\frac{1}{2}$ to 5 inches long, are usually yellowish striped in spring and early summer but mostly become plain green later. This handsome little species makes an exceedingly attractive ground cover in protected situations in regions where the minimum winter temperature is not much lower than 0° F. The leaves are often killed at temperatures several degrees higher but recovery of the plants in the spring is fairly rapid. Because of the vigor of the underground parts of the plant it may become weedy if the rhizomes are not prevented from spreading by a barrier of some sort. Plants furnished in lots of 3 to 10. For trial in the middle and upper South and on the Pacific coast. (Savannah, Ga.)

52670. *SASA AURICOMA*. Bamboo. From France. Presented by Vilmorin, Andrieux, & Co., Paris. A dwarf hardy bamboo of the running type, 1 to 2 feet high, native to China and Japan. It is a strikingly handsome little species, having green-and-yellow-striped leaves $1\frac{1}{2}$ to 6 inches long and up to three-quarters of an inch wide. It is very similar to *Sasa aureostriata*. Plants furnished in lots of 3 to 10. For trial in the middle and upper South and on the Pacific coast. (Savannah, Ga.)

75161. *SASA AURICOMA*. Bamboo. From England. Presented by Sir Arthur W. Hill, Director of the Royal Botanic Gardens, Kew. Same description as for the preceding, P. I. No. 52670. (Savannah, Ga.)

52674. SASA PYGMAEA. Bamboo. From France. Presented by Vilmorin, Andrieux & Co., Paris. One of the smallest known bamboos, often growing only 6 to 10 inches high. It is of the hardy running type and is a native of Japan. The leaves, 1 to 2 inches long, are green above and whitish pubescent beneath. The cold resistance of the plant is about the same as that of Sasa aureo-striata and the habits and cultural requirements are also much the same. Plants furnished in lots of 3 to 10. For trial in the middle and upper South and on the Pacific coast. (Savannah, Ga.)

92508. SASA VARIEGATA. From England. Obtained from V. N. Gauntlett & Co., Chiddingfold, Surrey. Variety Fortunei. A hardy dwarf bamboo with attractive green-and-white striped leaves. There are up to about 12 leaves on a branch, and they range up to 4 inches long by three-eighths of an inch wide. The species grows to a height of 12 to 18 inches and spreads rather rapidly by means of underground rhizomes. For trial in the South and on the Pacific coast. (Savannah, Ga.)

77004. SEMIARUNDINARIA FARINOSA. (Poaceae.) Bamboo. From China. Collected at Chihwashaan, Anhwei Province, by F. A. McClure, Bureau of Plant Industry. Chinese name Koo chu. A hardy running bamboo up to 15 feet high, with tough, fairly thick-walled culms up to 3/4 inch in diameter, purplish green when young. The pith is chambered, with the diaphragms nearly 1 1/4 inches apart. The nodes are prominent and the branches 3 to usually 5, acutely ascending, the middle one the largest. The leaves are somewhat drooping, oblong-lanceolate, acuminate, 3 to 7 inches long and 1/2 to 1 inch wide. The plant resembles Semiarundinaria fastuosa in general habit, and the culm sheaths mostly fall the first year. The culms are useful for plant stakes. For trial from the northern Gulf region to North Carolina and on the Pacific coast. (Savannah, Ga.)

52671. SEMIARUNDINARIA FASTUOSA (Arundinaria fastuosa). * Narihira bamboo. From France. Presented by Vilmorin, Andrieux & Co., Paris. An exceptionally handsome, hardy bamboo up to 25 feet high, native to Japan. It is of running habit but the rhizomes are less rampant than those of most hardy bamboos. The smaller culms are densely clothed for almost their entire length by the dark-green lanceolate leaves, which are up to 7 inches long and borne on upright branches. Taller culms, as in other bamboos, are without branches on the lower part. An area at least 15 feet across is required for the ultimate production of full-sized culms. The plant withstands a minimum temperature of 0° F. with little injury to the foliage but is killed back to the ground at a few degrees lower. Young plants must be watered very frequently in dry weather during the entire first season. Plants furnished in lots of 1 to 5, or up to 15 where desired for propagation. For trial from Philadelphia southward and on the Pacific coast. (Savannah, Ga.)

123847. SEMIARUNDINARIA SP. Bamboo. From Biltmore, North Carolina. Previously from cultivation in Europe, but native country unknown.) Presented by C. D. Beadle, Biltmore Estate. A handsome running bamboo up to 9 feet high, with 1 to 3 branches at a node of the culm and the culm internodes often slightly flattened above the branches; the culm is straighter and the sheaths less persistent even than in Semiarundinaria fastuosa, but the plant bears a general resemblance

to that species. The broad lanceolate leaves are glabrous, 3 to 5 1/2 inches long and 3/8 to 1 inch wide. (Savannah, Ga.)

75157. SHIBATAEA KUMASACA.* (Poaceae.) Bamboo. From England. Presented by the Director, Royal Botanic Gardens, Kew. Japanese name Okamezasa. This odd little Japanese bamboo, which in the past has carried several different botanical names and which looks but little like a bamboo, grows 3 to 6 feet in height. It is of running habit but spreads rather slowly. There are usually 5 diminutive branches at a node, each bearing a single, terminal, ovate-lanceolate, dark-green leaf 2 to 3 inches long and nearly an inch wide. The foliage is more or less injured at temperatures below 10° F. The culture is much the same as that of other running bamboos. (Savannah, Ga.)

89716. SHIBATAEA KUMASACA. Bamboo. From England. Obtained from V. N. Gauntlett & Co., Chiddinfold, Surrey. Same description as for preceding (P. I. No. 75157). (Savannah, Ga.)